In the claims:

Claims 1-20 cancelled.

21. (currently amended) A sintered high temperature superconducting (HTS) ceramic electric lead formed as three-dimensional (3D) HTS macro-ceramic solid product with honeycomb-like superconductive nano-architecture, comprising substantially uniformly aligned nano-size HTS ceramic crystal grains, silicate glass nano-thick films, and nano-size silver and/or inorganic dots that locate in nano-thick boundary areas of said superconductor ceramic crystal grains, and said nano-size films or dots provide honeycomb-like 3D nano-size network within said 3D HTS macro-ceramic solid product or HTS ceramic lead, and said electric lead is superconducting at liquid nitrogen cooling temperature, wherein said HTS ceramic crystal grains are composed of $YBa_2Cu_3O_{7-x}$ ceramic crystals, and an average number of oxygen atoms in a stoichiometric formula of $YBa_2Cu_3O_{7-x}$ ceramic crystals, where "x" may be varied in a range $0 < x < 0.3$, is so that it provides superconductivity of the HTS ceramic crystal grains and said sintered HTS ceramic lead or 3D HTS macro-ceramic product, wherein said HTS lead has the $YBa_2Cu_3O_{7-x}$ ceramic crystal grains having 10 – 25nm in length.

Claims 22 – 23 cancelled.

24. (previously presented) A sintered HTS ceramic electric lead as defined in claim 21, wherein said ceramic crystal grains are fully dense sintered, which causes substantial decrease of the nano-thick grain boundary gaps and, consequently, facilitates Josephson junction or tunneling superconducting inter-grain effects, resulting in an electric current flux transfer between said sintered superconducting ceramic crystal grains that constitute superconductivity of the sintered 3D HTS macro-ceramics or said HTS ceramic electric lead.

25. (previously presented) A sintered HTS ceramic electric lead as defined in claim 21, wherein said 3D network of said silicate glass or silver or inorganic nano-size or nano-thick films and dots are configured, so that it facilitates 3D percolation and vortex-pinning network effects, resulting in an electric current flux transfer between said sintered superconducting ceramic crystal grains that constitute superconductivity of the sintered 3D HTS macro-ceramics or said HTS ceramic electric lead.

26. (previously presented) A sintered HTS ceramic electric lead as defined in claim 21, wherein said HTS lead comprises sintered $YBa_2Cu_3O_{7-x}$ ceramics coating nickel-chromium or *NiCr* or 'nichrome' alloy substrate strand, said

HTS strand has the efficient substrate/ceramics cross-section ratio of about 1 : 1, and said HTS strand is configured so that it is reliably transfers electric current of 10 – 20kA/cm^2 that 50 – 100x higher than engineering electric current carrying capability or capacity of the ordinary copper wire.

27. (previously presented) A sintered HTS ceramic electric lead as defined in claim 21, wherein said HTS macro-ceramics comprise $YBa_2Cu_3O_{7-x}$ ceramics and achieve at liquid nitrogen cryogenic temperature an electric current carrying capability ≥ 10^8 Ampere/cm^2.

28. (previously presented) A sintered HTS ceramic electric lead as defined in claim 21, wherein said HTS macro-ceramics provide at liquid nitrogen cryogenic temperature substantial magnetic levitation or Meissner effect.

29. (previously presented) A sintered HTS ceramic electric lead as defined in claim 21, wherein under mechanical impacts said HTS macro-ceramics have the enhancing fracture toughness and ductility.